



Chemical and Biological Defense

**CBIAC**  
Information Analysis Center

**Newsletter**

Winter 2003

Volume 4 Number 1

# Canadian CBRN Counter-Terrorism Initiative Builds on Partnerships

**W**hen the reality of asymmetric threats to North American security was brought home by the events of 2001, the Canadian government science and technology (S&T) community got together to identify areas where scientific expertise existed but capability had to be increased. Of prominence was the need to coordinate and bolster the national capacity against chemical, biological, radiological and nuclear (CBRN) hazards and attack.

Shortly thereafter, the Government of Canada announced 7.7 Billion (CDN) of new funding in December of 2001 to address national security issues. The S&T community had been successful in securing a fund of \$170M (CDN) to create the CBRN Research and Technologies Initiative (CRTI). Based on the focused principles of innovation, relevance and expertise, partnerships were viewed as the means to leverage the funds and expertise to the greatest extent.

## New Model

The CRTI represents a new model of approaching S&T strategic planning and response in government. An interdepartmental approach, the Initiative is a joint effort with the Office of Critical Infrastructure Protection & Emergency Preparedness (OCIPEP), Health Canada, Environment Canada, Agriculture and Agri-Food Canada, Canada Food Inspection Agency, Department of Fisheries & Oceans, National Research Council, Natural Resources Canada, Royal Canadian Mounted Police (RCMP), Solicitor General, Canadian Security and Intelligence Service (CSIS), Treasury Board Secretariat, Privy Council Office and Defence R&D Canada. It brings together the science, intelligence, response and central government communities together for a coordinated approach.

## Mandate

CRTI was mandated to strengthen Canada's preparedness for, prevention of and response to a CBRN attack by fostering new investments in research and technology that will generate knowledge and technology, and support their application, while harnessing existing capabilities in four ways:

1. Creating clusters of federal labs as elements of a federal laboratory response network that will build S&T capacity to



- address the highest risk terrorist attack scenarios;
2. Establishing a fund to build capability in critical areas, particularly those identified in the scenarios that address biological and radiological attacks;
3. Accelerating technology into the hands of the first responders community and other operational authorities; and
4. Providing funds to those areas where national S&T capacity is deficient owing to obsolete equipment, dated facilities or inadequate scientific teams.

The diagram on page 10 illustrates how these components interplay, along with the risk assessment, to determine investment priorities for the management of CRTI.

## Investment Priorities

An in-depth risk assessment was undertaken in early 2002. (Because circumstances have changed sufficiently, the assessment will be updated this spring). In conjunction with the risk assessment, extensive consultation with stakeholders, including representatives from the First Responders community, was undertaken to establish investment priorities for the CRTI. These priorities are subject to revision as required and are listed in no particular order:

1. Lab cluster management and operations;
2. Collective command, control, communications, coordination and information (C4I) capabilities for CBRN planning and response;
3. S&T for equipping and training first responders;
4. Prevention, surveillance and alert capabilities;
5. Immediate reaction and near-term consequence management capabilities;
6. Longer-term consequence management issues;
7. Criminal investigation capabilities;
8. S&T dimensions of risk assessment; and
9. Public confidence and psychosocial factors.



The **Chemical and Biological Defense Information Analysis Center (CBIAC)** is a Department of Defense (DoD)-sponsored Information Analysis Center (IAC) operated by Battelle Memorial Institute and administered by the Defense Information Systems Agency (DISA), Defense Technical Information Center (DTIC) under the DoD IAC Program Office (Contract No. SPO700-00-D-3180). The CBIAC is supported by Horne Engineering Services, Inc., Innovative Emergency Management, Inc., MTS Technologies, Inc., QuickSilver Analytics, Inc., and SciTech, Inc. Contact the CBIAC Contracting Officer's Technical Representative (COTR) at:

CDR USA SBCCOM  
Edgewood Chemical Biological Center  
ATTN: AMSSB-RRT-OM (CBIAC COTR)  
5183 Blackhawk Road  
Aberdeen Proving Ground, MD 21010-5424

U.S. Government agencies and private industry under contract to the U.S. Government can contact the CBIAC for information products and services. CBIAC services also extend to all state and local governments and the first responder community, to include local emergency planners, firefighters, medics and law enforcement personnel.

The CBIAC is located in Building E3330, Room 150, Aberdeen Proving Ground - Edgewood Area, Maryland 21010. For further information or assistance, visit or contact the CBIAC.

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**URL: <http://www.cbic.apgea.army.mil/>**



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The CBIAC Newsletter, a quarterly publication of the CBIAC, is a public release, unlimited distribution forum for chemical and biological defense information. It is distributed in hardcopy format and posted in Portable Document Format (PDF) on the CBIAC Homepage.

The CBIAC welcomes unsolicited articles on topics that fall within its mission scope. All articles submitted for publication consideration must be cleared for public release prior to submission. The CBIAC reserves the right to reject or edit submissions. For each issue, articles must be received by the following dates: Winter (First Quarter) - November 1st; Spring (Second Quarter) - February 1st; Summer (Third Quarter) - May 1st; Fall (Fourth Quarter) - August 1st.

All paid advertisements and articles are subject to the review and approval of the CBIAC COTR prior to publication. The appearance of an advertisement or article in the *CBIAC Newsletter* does not constitute endorsement by the DoD or the CBIAC.

## CBIAC POINTS OF CONTACT

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**Richard M. Gilman**  
Information Collection

**Mary Jo Waters**  
Current Awareness & Promotions; Newsletter Editor

# ARO Scientific Services Program

**The U.S. Army Research Office has announced the 2003 U.S. Army Summer Faculty Research & Engineering Program (SFREP).** The SFREP is an opportunity for Army scientists to collaborate with university faculty on existing technical projects or start new short-term efforts. While the immediate benefit of the SFREP is the advancement of Army scientific and engineering research, the far-reaching goal of the SFREP is to stimulate communication among the academic community and Army scientists. Under the SFREP, university and college professors are exposed to research and development activities in an Army laboratory environment. Army organizations are encouraged to host a faculty member for the entire summer; however, the research may also be balanced between the Army organization and the faculty member's home institution.

To give an example of an SFREP task, U.S. Army Medical Research Institute of Chemical Defense sponsored a faculty member last summer to research treatment of intoxication by botulinum neurotoxin. As stated in the task objective, "Therapeutic strategies for botulinum neurotoxin (BoNT) are hampered by systemic toxicity of the candidate compounds and by the difficulty of drugs reaching the nerve terminal cytosol. To address these difficulties, a targeted delivery vehicle (DV) has been synthesized. The current project will characterize the interaction of the DV with cultured neurons and nerve-muscle preparations and evaluate its ability to reverse the toxicity of BoNT exposure."



# AR

## Scientific Services Program

# SSSP

*Science to Serve the Warfighter*

All Army organizations that support scientific R&D efforts can take advantage of the SFREP. Recently, U.S. Army Medical Research Institute of Infectious Diseases (USAMRIID), U.S. Army Aeromedical Research Laboratory (USAARL), U.S. Army Research Laboratory – Human Research and Engineering Directorate (HRED), U.S. Army Research Laboratory – Sensors and Electron Devices Directorate (SEDD), U.S. Army Research Laboratory – Weapons and Materials Research Directorate (WMRD), U.S. ARMY CECOM Night Vision and Electronic Sensors Directorate (NVESD), and U.S. ARMY TACOM Tank Automotive Research, Development and Engineering Center (TARDEC) have also sponsored projects under the SFREP. Of course, each of these organizations has distinct research interests. The SFREP supports a broad range of research topics to allow each Army organization to focus on its own areas of interest. The range of previous SFREP research topics includes: Biochemistry, Toxicology, Microbiology, Military Infectious Diseases, Medical Chemical and Biological Defense, Structural Mechanics, Composite Materials for Weapon Systems, Contaminant Fate/Effects & Remediation, Numerical Modeling/Simulation, Advanced Ground Vehicle Systems Concepts, Countermine Technology, Hearing Protection Methods, Human Related Design Issues for Automated Battle Systems, Nonlinear Optical Devices, Embedded Technologies for Smart Materials, and Characterization and Processing of Nanomaterials.

**Complementing the SFREP, the U.S. Army High School Science & Mathematics Faculty Program (HSSMFP) is similar program for outstanding high school teachers.** The HSSMFP aims to develop a hands-on appreciation of the professional challenges undertaken by scientists and engineers in order to provide a personal experience from which to counsel and encourage students to undertake and continue science and mathematics curricula. Through the HSSMFP, high school faculty members have contributed to research projects such as Bacterial Toxin Vaccine and Therapeutic Studies, Simulants for Chemical Agents in Tests on Military Cloth, Image Quality Analysis of Microlens Arrays, Biochemistry of Novel Food Processes and Nutrient Delivery Systems, and Benchmark Wave Model Testing.

Every winter Army research organizations/laboratories/centers are invited to participate in both the SFREP and the HSSMFP by submitting specific research areas of interest. The research topics are included in the program public announcements, and qualified faculty members apply to the program for consideration by the participating Army organizations. For more information about the SFREP and HSSMFP contact Susan Burns at [burnss@battelle.org](mailto:burnss@battelle.org) or (919) 933-7209, ext. 102.

## Contract Awards • by Mary Frances Tracy

### R&D Services, Countermeasure to Bio-Terrorism

University of South Florida Office of Research • Tampa, FL  
\$1,999,887. September 30, 2002

By U.S. Army Robert Morris Acquisition Center, Aberdeen Proving Ground, MD

### U.S. Based Collaboration in Emerging Viral and Prion Diseases

University of Texas Medical Branch • Galveston, TX  
\$18,090,163. September 30, 2002

By National Institute of Allergy and Infectious Diseases, Bethesda, MD

### Construction of Advanced Chemistry Laboratory

Poole & Kent Co./Gaudreau Inc. • Baltimore, MD  
\$38,129,517. September 30, 2002

By U.S. Army Engineer District, Baltimore, MD

### Research Contract for the Discovery and Development of a Novel Treatment of Serious Bacterial and Fungal Infections

Ana Mac Inc. • Palo Alto, CA  
\$8,632,170. September 30, 2002

By U.S. Army Materiel Command, Research Triangle Park, NC

### Quick Doff Chem/Bio Protective Hoods

Harris Manufacturing Company, Inc. • Trenton, NJ  
\$2,073,500. September 30, 2002

By U.S. Army Tank-Automotive & Armaments Command, Rock Island, IL

### Chemical Depot Clean-Up, Pueblo, Colorado

Bechtel National Inc. • San Francisco, CA  
\$1.5 Billion (Estimated). September 30, 2002

By U.S. Department of Defense

### Production of Non-Replicating Adenoviral Vectors

Crucell Holland B.V. • Leiden, CA • Netherlands  
\$2,281,000. October 1, 2002

By National Institute of Allergy and Infectious Diseases, Bethesda, MD

### Development and Testing of Vaccines Against Anthrax

VaxGen, Inc. • Brisbane, CA  
Avecia International HQ  
Blackley, Manchester M9 8ZS  
\$22,500,000. October 4, 2002

By National Institute of Allergy and Infectious Diseases, Bethesda, MD

### Chemical Waterproof Bag

Winston-Salem Industries for the Blind, Inc.  
Winston-Salem, NC  
\$72,802. October 16, 2002

By U.S. Army Tank-Automotive & Armaments Command, Rock Island, IL

### Quick Doff Chem/Bio Protective Hoods

Harris Manufacturing Company, Inc • Trenton, NJ  
\$3,304,840. October 17, 2002

By U.S. Army Tank-Automotive & Armaments Command, Rock Island, IL

### M18A1 Gas Filters

Hunter Manufacturing Co. • Solon, OH  
\$648,000. October 17, 2002

By U.S. Army Tank-Automotive & Armaments Command, Rock Island, IL

### M42 Carrier Assemblies and M40 Carrier Assemblies

Eastern Canvas Products Inc. • Ward Hill, MA  
\$143,442. October 21, 2002

By U.S. Army Tank-Automotive & Armaments Command, Rock Island, IL

### M8 Chemical Paper

Trutech Inc. • Riverhead, NY  
\$132,236. October 24, 2002

By U.S. Army Tank-Automotive & Armaments Command, Rock Island, IL

### Assess Cutting-Edge Biometric Security Technologies

Unisys Corporation • Blue Bell, PA  
\$1,230,000. October 29, 2002

By U. S. Department of Defense

### Upgrade of Eight Fox Nuclear, Chemical and Biological Reconnaissance Systems

General Dynamics Land Systems Division  
Sterling Heights, MI

\$18,492,256 (modification to a firm-fixed-price and cost-plus-fixed-fee contract). November 14, 2002

By U.S. Army Robert Morris Acquisition Center, Aberdeen Proving Ground, MD

### Develop, Manufacture, Field and Sustain a (CB) Mask System for all Aircrew - Joint Service Aircrew Mask (JSAM) Program

Scott Aviation. A Division of Scott Technologies  
Lancaster, NY

\$21,000,003. November 22, 2002

By Headquarters 311th Human Systems Wing, Brooks Air Force Base, TX

### Development of CpG Oligonucleotides as a Vaccine Adjuvant to Enhance the Safety and Efficacy of a Vaccine Against Anthrax Toxin Proteins

Coley Pharmaceuticals Inc. • Wellesley, MA  
\$6,000,001 cost reimbursement. Dec. 6, 2002

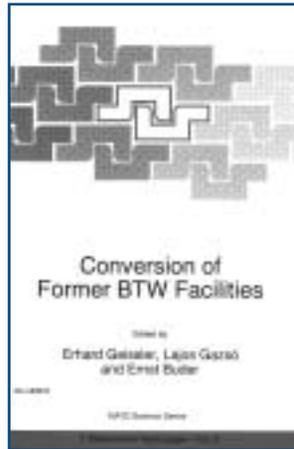
By U.S. Army Robert Morris Acquisition Center, Research Triangle Park, NC

# New CBIAC Information Resources • By Richard M. Gilman

## Books

Geissler, Erhard, Lajos Gazso and Ernst Buder, eds. **Conversion of Former BTW Facilities.** Dordrecht: Kluwer Academic Publishers, 1998.

Topics receiving chapter-length treatment include technologies for monitoring the BWC, "Redirecting Biological Warfare Capacity to International Health Biotechnology," "Conversion of BTW Facilities: Lessons from German History," "Conversion of Past Biological Weapons Facilities: Lessons from Western Conversion," "Development of Biopharmaceutical Manufacturing at Fort Detrick, Maryland," "The Possibilities and Limitations of Biological Weapons Conversion: Personnel and Facilities," and "Redirection of BW Experts in the Framework of the International Science and Technology Center (ISTC)."

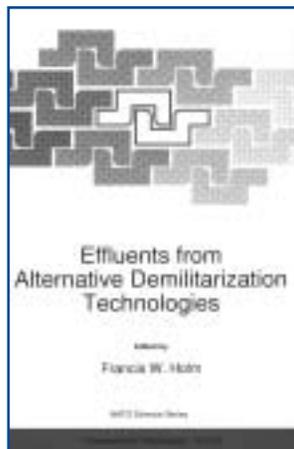


Includes numerous diagrams and table, a glossary of BW facility conversion terms, and an index.

CB-189025 • ISBN 0-7923-5250-5  
Kluwer Academic Publishers • Order Department  
P.O. Box 358, Accord Station • Hingham, MA 02018-0358  
Tel (781) 871-6600 • Fax (781) 871-6528

Holm, Francis W., ed. **Effluents from Alternative Demilitarization Technologies.** Dordrecht: Kluwer Academic Publishers, 1998.

Chemical demilitarization topics receiving chapter-length treatment include "Mobile Demilitarization System Treatment Processes," "Hydrolysis and Oxidation Process Effluents of Some Chemical Warfare Agents," "Removal of Arsenical By-Products from Chemical Warfare Destruction Effluents," "Introduction of Green Plants for the Control of Metals and Organics in Environmental Remediation," and risk assessments associated with the storage of chemical munitions at various sites in the Russian Republic.



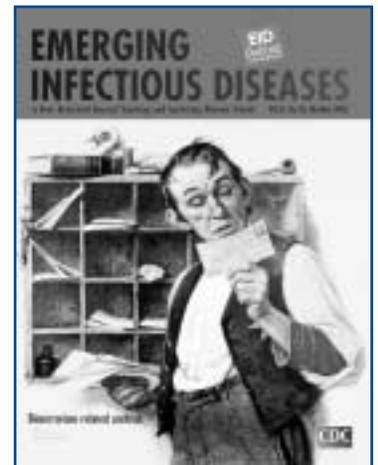
Includes numerous diagrams and tables, an appendix describing various alternative chemical demilitarization technologies, and an index.

CB-189026 • ISBN 0-7923-5254-8  
Kluwer Academic Publishers  
Order Department  
P.O. Box 358, Accord Station • Hingham, MA 02018-0358  
Tel (781) 871-6600 • Fax (781) 871-6528

## Documents from the Web

**Emerging Infectious Diseases.** Vol. 8, No. 10 (October 2002)  
<http://www.cdc.gov/ncidod/EID/vol8no10/pdf/Vol8No10.pdf>

This is a special theme issue of the Centers for Disease Control's EID devoted to bioterrorism-related anthrax. "In this issue...numerous individuals involved in the public health aspect of the anthrax investigation document their experiences. Articles describe the epidemiologic and laboratory investigations, applied research findings, environmental assessment and remediation experiences, workplace safety issues, prophylaxis and clinical care information, international aspects, and collaborations between law enforcement and public health officials. The articles also highlight the widespread efforts made to identify the source of exposure and prevent illness among those exposed." (From the introductory article of the issue: James M. Hughes and Julie Louise Gerberding. *Anthrax Bioterrorism: Lessons Learned and Future Directions*)



CB-163471  
National Center for Infectious Diseases  
Centers for Disease Control and Prevention  
1600 Clifton Rd. • Mail Stop D61  
Atlanta, GA 30333  
Phone: (404) 371-5329 • Fax: (404) 371-5449

United States General Accounting Office. **Diffuse Security Threats: Technologies for Mail Sanitation Exist, but Challenges Remain.** April 2002. Washington, D.C.: GAO, 2002. <http://www.gao.gov>. See "Special Collections - Terrorism."

"Biological terrorism differs from other types of CBRN terrorism in that it would impose particularly heavy demands on the nation's public health and health care systems. Although a chemical attack would also tax these systems, bioterrorism would impose especially stressful burdens. Yet, that same public health system is the crucial factor in an effective response. A highly effective public health system should make an important contribution to deterring the threat by demonstrably diminishing

## CALENDAR OF EVENTS

If you would like to have a Chemical and/or Biological Defense or Homeland Security course or event posted on the CBIAC Calendar of Events, submit the pertinent information via email to [cbiac@battelle.org](mailto:cbiac@battelle.org). Due to space limitations, the CBIAC will accept submissions on a first-come, first-served basis and reserves the right to reject submissions. For a more extensive list of events, visit our website at <http://www.cbiac.apgea.army.mil/>.

March 9-12, 2003

### **ASM Biodefense Research Meeting "Future Directions for Biodefense Research: Development of Countermeasures"**

Baltimore, MD

[meetingsinfo@asmusa.org](mailto:meetingsinfo@asmusa.org)

<http://www.asmbiodefense.org/>

March 9-14, 2003

### **PITTCON 2003**

Orlando, Florida

<http://www.pittcon.org>

March 17-21, 2003

### **Genome Tri-Conference/Molecular Medicine Marketplace**

Santa Clara, CA

[chi@healthtech.com](mailto:chi@healthtech.com)

<http://www.chimolecularmed.com>

<http://www.chimolecularmed.com/precon.asp>

March 17-19, 2003

### **South Carolina Hurricane/Emergency Management Conference Winds of Change: Our Reality**

Hilton Head Marriott Beach and Golf Resort

Hilton Head, SC

[jhboettc@emd.state.sc.us](mailto:jhboettc@emd.state.sc.us)

<http://www.scemd.org>

March 18-20, 2003

### **Food Safety Summit**

Washington, DC

[Info@FoodSafetySummit.com](mailto:Info@FoodSafetySummit.com)

<http://www.regweb.com/info.cfm?RegWebID=3425&CFID=3417873&CFTOKEN=20058354>

March 19-21, 2003

### **BTR 2003 Unified Science and Technology for Reducing Biological Threats and Countering Terrorism**

Albuquerque, NM

<http://coffee.phys.unm.edu/btr>

March 23-28, 2003

### **Chemical & Biological Terrorism Defense**

Buellton, CA

[app@grcmail.grc.uri.edu](mailto:app@grcmail.grc.uri.edu)

<http://www.grc.uri.edu/programs/2003/defense.htm>

March 24-28, 2003

### **Course: Consequence Management: Terrorism**

Chicago, IL

[http://www.nici.org/Catalog/Applications/2003/03\\_25\\_CMT.htm](http://www.nici.org/Catalog/Applications/2003/03_25_CMT.htm)

<http://www.nici.org/Catalog/schedule.html>

March 30-April 3, 2003

### **5th International Conference on Anthrax**

Nice, France

[anthrax2003@colloquium.fr](mailto:anthrax2003@colloquium.fr)

<http://www.colloquium.fr/anthrax2003/infos/body.html>

March 31-April 3, 2003

### **DTIC Annual User Conference**

Arlington, VA

[confinfo@dtic.mil](mailto:confinfo@dtic.mil)

<http://www.dtic.mil/dtic/annualconf>

March 31-April 4, 2003

### **3rd Annual Army Knowledge Management Symposium**

King of Prussia, PA

<http://www.armyknowledgemanagementsymposium.com>

April 5-8, 2003

### **The Society for Healthcare Epidemiology of America, Inc.'s 13th Annual Scientific Meeting**

Arlington, VA

<http://www.shea-online.org>

April 7-9, 2003

### **Symposium/Panel Meeting: "NATO Force Health Protection Requirements from Pre to Post Deployment: Population Health of the Military"**

Antalya, Turkey

<http://www.rta.nato.int/Detail.asp?Panel=HFM&Ref=100&Host=TU>

April 7-10, 2003

### **29th Environmental and Energy Symposium & Exhibition**

Richmond, VA

POC: NDIA

[dharper@ndia.org](mailto:dharper@ndia.org)/[tbecker@ndia.org](mailto:tbecker@ndia.org)

<http://www.ndia.org>

April 7-11, 2003

### **COURSE: Field Management of Chemical and Biological Casualties (FCBC)**

Aberdeen Proving Ground, MD

[ccc@apg.amedd.army.mil](mailto:ccc@apg.amedd.army.mil)

<http://ccc.apgea.army.mil/>

April 10-11, 2003

### **AAAS Colloquium Science and Technology Policy**

Washington, DC

<http://www.aaas.org/spp/rd/colloqu.htm>

# IN THE NEWS

By Mary Frances Tracy

## Vaccine developed for lethal ricin

Andy Coghlan

**NewScientist.com**

September 12, 2002

"A vaccine against the lethal toxin ricin could soon be available - and it may be needed, researchers warn. 'A big stash of ricin was found in the caves of Afghanistan,' says Ellen Vitetta of the University of Texas Southwestern Medical Center in Dallas, whose team developed the vaccine."

<http://www.newscientist.com/news/news.jsp?id=ns99992783>

## NYU To Be Home To New, Federally-Funded Catastrophe Preparedness and Response Center

**NYU Press Release**

October 11, 2002

"New York University (NYU) announced this week that it has been selected to establish a new, federally funded center to improve responses to major terrorist attacks and natural catastrophes. The U.S. Congress allocated \$7 million to NYU to open and operate the center, which will primarily use NYU scholars to analyze 'best practices' in catastrophe preparedness and response."

[http://www.nyu.edu/publicaffairs/newsreleases/b\\_NYU\\_T12.shtml](http://www.nyu.edu/publicaffairs/newsreleases/b_NYU_T12.shtml)

## Assessing Iraq's Arsenal

Lois R. Ember

**Chemical & Engineering News**

Volume 80, Number 41

October 14, 2002

"...On the basis of seven years of UN inspections, from the end of the Persian Gulf War in 1991 to 1998 when inspections were halted, the British dossier estimates what was never accounted for or what was missing. The quantities are staggering: 360 tons of bulk chemical warfare agents, including 1.5 tons of VX nerve gas; up to 3,000 tons of precursor chemicals for making mustard gas and the nerve agent sarin, cyclosarin, and VX; enough growth media to produce 26,000 L of anthrax spores; and more than 30,000 special munitions to deliver chemical and biological agents."

<http://pubs.acs.org/cen>

<http://pubs.acs.org/cen/back.html#5>

## Bioterrorism Preparedness Initiative gets \$1 million from CDC

**UMSPH News Release**

October 9, 2002

"ANN ARBOR---The University of Michigan will work toward making the state of Michigan a safer place by training public health professionals who must prevent and respond to bioterrorist attacks and other infectious disease outbreaks. The U-M Bioterrorism Preparedness Initiative recently was notified that it will receive \$1 million from the Centers for Disease Control and Prevention this year, renewable for up to three years. "

[http://www.sph.umich.edu/news\\_events/52press.html](http://www.sph.umich.edu/news_events/52press.html)

## Detrick biomedical research partnership announced

Staff Reports

**Fort Detrick Standard**

October 17, 2002

"As a result of a congressional mandate and anticipated funding, the U.S. Army Medical Research Institute of Infectious Diseases and the National Institute of Allergy and

Infectious Diseases will become partners in conducting biodefense research."

[http://www.dcmilitary.com/army/standard/7\\_21/local\\_news/19773-1.html](http://www.dcmilitary.com/army/standard/7_21/local_news/19773-1.html)

## CDTF offers U.S., allies world class chemical defense training

Pfc. James Ramirez

Fort Leonard Wood **Guidon**

October 17, 2002

"Is the U.S. military ready to defend America against chemical attacks by enemies like Iraq? The nation's answer is in the training the U.S. Army Chemical School's Chemical Defense Training Facility provides to nuclear, biological and chemical specialists, military and civilian, American and foreign. The CDTF, like no other facility in the country, provides preparations for a chemical defense."

## Governors form homeland division

Dibya Sarkar

**FCW.com**

October 17, 2002

"The National Governors Associations announced Oct. 16 the formation of a Homeland Security and Emergency Management Division, a move the group said would better help state governments design and implement defense, response, and recovery plans. The new division will focus on prevention of and response to natural disasters, as well as agricultural, biological, chemical, cyber, nuclear, and radiological terrorism."

<http://www.fcw.com/geb/articles/2002/1014/web-nga-10-17-02.asp>

## Study could reduce Anthrax shots, decrease side effects

Karen Fleming-Michael

**DefenseLINK News**

October 31, 2002

"A study to decrease the required number of Anthrax shots and its accompanied side effects is being conducted at the Walter Reed Army Institute of Research in Maryland. The study's goals are twofold. The first is proving the anthrax vaccine, manufactured by BioPort Corp in Lansing, Mich., is still effective when subjects are given fewer doses than the normal regimen of six shots delivered at one, two and four weeks and then at six, 12 and 18 months, with annual boosters. ...The second goal is to change the way the shots are given, which should reduce the side effects of redness, tenderness, swelling and discomfort sometimes associated with the vaccine."

[http://www.defenselink.mil/news/Nov2002/n11012002\\_200211013.html](http://www.defenselink.mil/news/Nov2002/n11012002_200211013.html)

## HHS Announces Creation of Medical Reserve Corps Units

**US Department of Health & Human Services News Release**

November 1, 2002

"HHS Secretary Tommy G. Thompson announced 42 grants totaling \$2 million to community-based organizations to begin building local Medical Reserve Corps (MRC) units that will help local communities prepare and respond in the event of a public health emergency."

<http://www.hhs.gov/news/press/2002pres/20021101b.html>

# Patents awarded in development of Army active topical skin protectant

by Cindy Kronman, PAO, USAMRICD

**R**ecently, Dr. Ernest H. Braue, Jr., and Capt. Stephen T. Hobson, scientists at the US Army Medical Research Institute of Chemical Defense (USAMRICD), and their collaborators were awarded seven patents from their research to develop a barrier cream that can not only prevent chemical warfare agents from being absorbed into the skin, but also neutralize these agents into less toxic products (i.e., serve as a reactive matrix). A patent was awarded for each type or category of material that was shown to be an effective reactive matrix. Three more patent applications on active topical skin protectant formulations are still under consideration by the US Government Patent and Trademark Office.

This research effort is a continuation of earlier studies, begun in the 1980's, to develop a topical barrier cream to augment the protection afforded by the protective overgarments and/or redefine the circumstances requiring mission oriented protective posture (MOPP) levels. Transitioned to the Production, Fielding, Deployment and Operational Support Phase of development in 2000, this topical barrier cream, now called Skin Exposure Reduction Paste Against Chemical Warfare Agents (SERPACWA), will be available to warfighters in 2003.

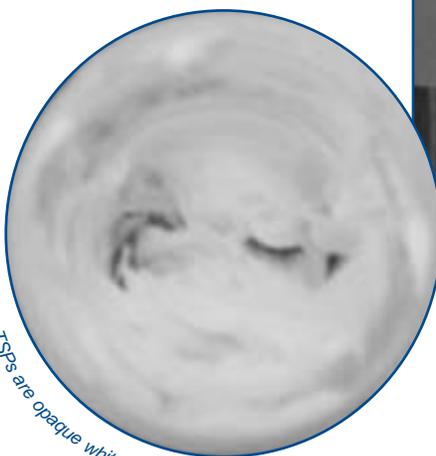
Even as SERPACWA demonstrated barrier properties to chemical warfare agents and advanced through the stages of development, scientists recognized the need to improve upon the formulation. The answer lay in developing a formula that included an active compound to neutralize the chemical warfare agents while maintaining or increasing the formulation's protective barrier properties.

USAMRICD initiated a research effort to develop an effective material that would act as both a protective barrier and an active destructive matrix against chemical warfare agents in 1994. These active barrier creams are composite materials consisting of a base cream and an active moiety. Using an established topical skin protectant base cream of perfluorinated-polyether oil and polytetrafluoroethylene solids, USAMRICD scientists incorporated over 150 different active components. Classes tested include organic polymers, enzymes, hybrid organic-inorganic materials, polyoxometallates, inorganic composites, inorganic oxides,

metal alloys, and small organic molecules. These compounds were formulated into over 400 aTSPs. The patents awarded so far are for barrier creams or topical skin protectants containing 1) organophosphorus acid anhydride hydrolase enzymes and crosslinked enzyme crystals, 2) polyoxometallates and/or coinage metal complexes, 3) hybrid organic polysilsesquioxane materials, 4) hybrid organic polyoxometallates, 5) reactive nanoparticles, 6) combinations of reactive nanoparticles and polyoxometallates, and 7) polymer coated metal alloys.

The efficacy of these formulations against both the blister agent sulfur mustard (HD) and the nerve agent soman (GD) was determined using a variety of models as part of a product development plan. The optimum active topical skin protectant formulations display excellent resistance against nerve agents (in some cases complete elimination of break-through after 20 hours), and blister agents (99% reduction in break-through after 20 hours).

These active topical skin protectants continue to move towards advanced development with the ultimate goal of complete protection for U.S. warfighters and civilians against chemical warfare agents.



The aTSPs are opaque white or colored creams.



To combine the base material and the active moiety in the aTSP formulation, MRICD scientists, in collaboration with Dr. Ray Yin of the Polymers Research Branch, Weapons and Materials Research Directorate at the Army Research Laboratory, use a twin-screw extruder.

## New CBIAC Info. Resources *cont.*

the gains of a potential attack. It also constitutes the "first line of defense" in the event deterrence or prevention fails. Ultimately, it will be the public health system that will be called on to mitigate and ameliorate the consequences of a terrorist attack using biological weapons." (*Executive Summary*)

CB-160818  
U.S. General Accounting Office  
P.O. Box 37050 • Washington, D.C. 20013  
Tel: (202) 512-6000 • Fax: (202) 258-4066

## Web Sites of Interest

**Center for Infectious Disease Research & Policy**  
<http://www1.umn.edu/cidrap/>

**Chemical and Biological Weapons Information For Emergency, Safety and Security Personnel**  
<http://www.cbwinfo.com/>

**Dusty Agents and the Iraqi Chemical Weapons Arsenal**  
[http://www.nti.org/e\\_research/e3\\_20b.html](http://www.nti.org/e_research/e3_20b.html)

**Iraq Watch**  
<http://www.iraqwatch.org/>

**National Library of Medicine--Chemical and Biological Warfare Agents**  
<http://sis.nlm.nih.gov/Tox/ToxSpecial.html>

**National Library of Medicine--Toxline and ChemIDplus**  
<http://toxnet.nlm.nih.gov/>

**Project 112 (including Project SHAD)**  
<http://www.va.gov/shad/>

**Rand Corporation--publications**  
<http://www.rand.org/publications>

**Scirus--the science only search engine**  
<http://www.scirus.com>

**Soldier Biological and Chemical Command**  
<http://www.sbccom.army.mil/>

**Special Collection on Iraq: Biological Weapons Sites**  
[http://www.nti.org/e\\_research/e1\\_iraq\\_BWfacilities.html](http://www.nti.org/e_research/e1_iraq_BWfacilities.html)

**Virtual Naval Hospital--Textbook of Military Medicine**  
<http://www.vnh.org/MedAspChemBioWar/index.html>

## In the News *cont.*

**INEEL researchers discover that concrete degrades nerve agent and can predict rate of decay**  
**Idaho National Engineering and Environmental Laboratory, Department of Energy News Release** November 18, 2002  
Researchers at the Department of Energy's Idaho National Engineering and Environmental Laboratory can detect the nerve agent VX on concrete surfaces using a unique chemical detection instrument. Scientific research into how quickly a nerve agent decays has the potential both to help the U.S. military counter terrorist threats and to support ongoing studies in environmental restoration. What's more, researchers can now predict how quickly VX decays when it is sprayed on concrete.

<http://newsdesk.inel.gov/contextnews.cfm?ID=375>

For complete article see:

<http://pubs.acs.org/cgi-bin/article.cgi/esthag/2002/36/i22/pdf/es025754n.pdf>

### DoD Database Provides Global Tripwire for Bio-Terror

Gerry J. Gilmore  
American Forces Press Service

**DefenseLINK News** December 17, 2002

"DoD personnel are on the watch for possible bio-terrorism, scanning computer databases featuring outpatient treatment information gathered from more than 300 military hospitals and medical clinics worldwide. That effort, called the Electronic Surveillance System for Early Notification of Community-based Epidemics, or ESSENCE, is helping DoD to detect both naturally occurring outbreaks of disease -- and potential bio-terrorism attacks, noted Army Dr. (Col.) Patrick W. Kelley. He is an epidemiologist at the Walter Reed Army Institute of Research in Silver Spring, Md."

[http://www.defenselink.mil/news/Dec2002/n12172002\\_200212173.html](http://www.defenselink.mil/news/Dec2002/n12172002_200212173.html)

### For additional news items:

**VALUE ENGINEERING ACHIEVEMENT AWARDS FOR 2002**  
[http://www.defenselink.mil/news/Nov2002/b11222002\\_bt596-02.html](http://www.defenselink.mil/news/Nov2002/b11222002_bt596-02.html)

**Latest information on Smallpox from the CDC:**  
<http://www.bt.cdc.gov/agent/smallpox/index.asp>

**science.gov** connects to a searchable website of U.S. Government Science and Technology  
<http://www.science.gov/>

### SBCCOM e-Catalyst:

Archives  
<http://www.sbccom.army.mil/hooah/archive/index.htm>

### Military Medical Technology

See "Ghost Busting: The Specter of Chemical-Biological Weapons"

[http://www.mmt-kmi.com/Archives/6\\_7\\_MMT/6\\_7\\_index.cfm](http://www.mmt-kmi.com/Archives/6_7_MMT/6_7_index.cfm)

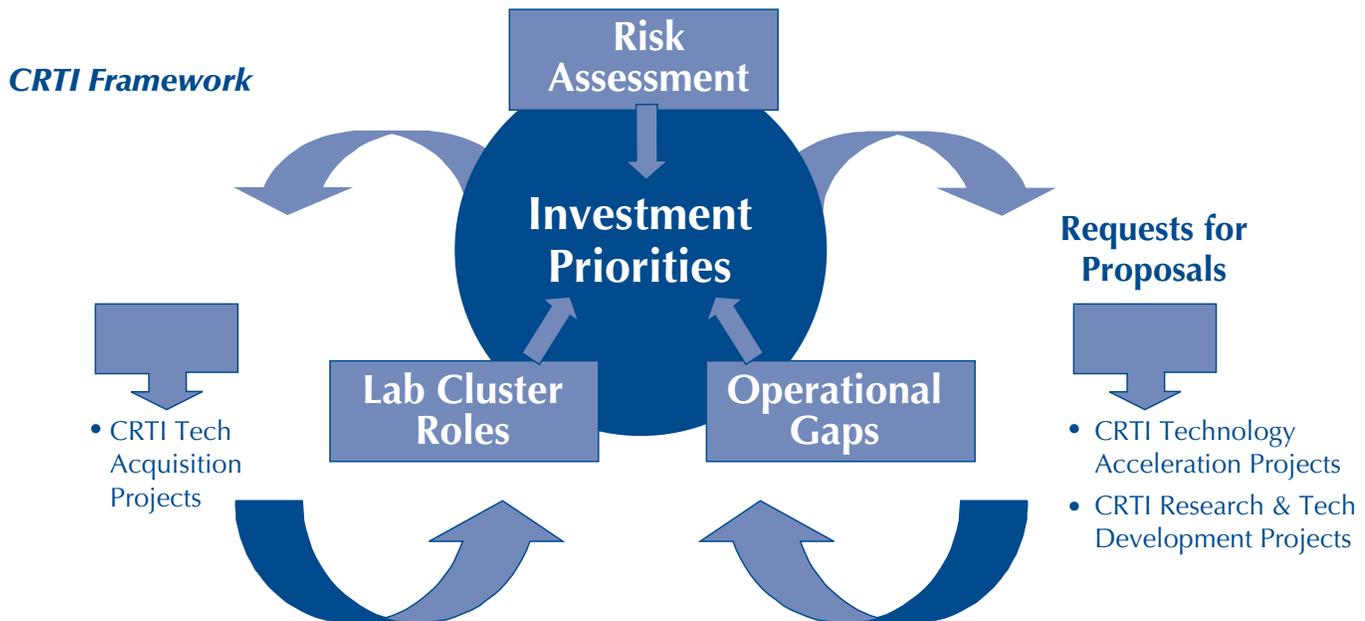
## “Canadian CBRN” cont.

### Lab Clusters

The Lab Clusters are the federal laboratory response network with the S&T capacity. They contribute the investment priorities and take guidance from them. Three clusters, Biology, Chemistry and Radiological/Nuclear, are tasked to ensure their preparedness through the development, maintenance and evolution of a cluster implementation plan. This involves

### Building on Partnerships

Fundamental to this Initiative is the principle of partnership. Funding from the CRTI is available to each of the projects up to 67%. The remainder must come from matching funding, in-kind contributions and the leveraging of expertise in partnerships.



developing roles and procedures for response during a CBRN event, identifying capability gaps and selecting equipment and infrastructure acquisition projects. There is also a direct requirement to ensure appropriate working relationships and communications between cluster members, pan clusters and with other stakeholders, particularly First Responders.

### Research and Technology Investment Funds

Three funds were established to build Canadian capacity in CBRN preparedness and response. The Technology Acquisition fund is employed to establish or enhance the infrastructure and equipment of the three government Lab Clusters. The Technology Acceleration fund is used to advance the commercialization and transition to use by First Responders and other operational authorities of technologies that address key capacity gaps. These are technologies that are already in the pipeline and require a boost in resources to get to production. Funding for Research and Technology Projects is used to close the gaps in knowledge and capabilities of the S&T and operational communities so as to enable effective response to future CBRN threats.

In 2002, the first year of funding, \$14.4M (CDN) was assigned to Technology Acquisition and \$46M (CDN) was contributed to the other two categories. This amount is being leveraged significantly by the contributions and knowledge of partnerships both nationally and internationally. While Canadian federal government departments and agencies must act as the lead partners in projects, the other partners cover a broad range of Canadian government departments, First Responders, universities, and private industry.

Just as the Canadian S&T community recognized that they could leverage their own expertise and infrastructure to strengthen CBRN preparedness, the CRTI hopes to broaden the effectiveness of the program through international linkages. Building relationships across borders and within the global CBRN community will be one of the goals of CRTI as it matures.

### CRTI Call for Proposals

CRTI calls for Proposals annually in January commencing in 2003. For details on the application process or other information about CRTI, please go to [www.crti.drdc-rddc.gc.ca](http://www.crti.drdc-rddc.gc.ca).

# 2003 CBIAC Products

Code	Price	Title
CR-02-05	\$25.00	<b>Chemical Agent Simulants and Associated Technologies</b> ; U.S. Federal Government Agencies Only; Unclassified
CR-01-04	\$45.00	<b>Joint Service Chemical and Biological Science and Technology Base Program in Decontamination</b> (CD-ROM); U.S. Federal Government Agencies and their Contractors; Unclassified
CR-01-03	\$25.00	<b>Air Purification Technologies</b> ; U.S. Federal Government Agencies and their Contractors; Unclassified
CR-00-02	\$25.00	<b>Critical Review on Anti-Crop Biological Agents and Associated Technologies</b> ; U.S. Federal Government Agencies and their Contractors; Unclassified
CR-00-01	\$75.00	<b>Chemical Biological / Smoke Modeling and Simulation (M&amp;S) Newsletter Compilation</b> (CD-ROM); U.S. Federal Government Agencies and their M&S Contractors; Unclassified
CR-99-10	\$60.00	<b>Wide Area Decontamination: CB Decontamination Technologies Equipment and Projects</b> ; Unlimited; Unclassified
CR-99-09	\$20.00	<b>Determination of Optimum Sorbent Material for Collection and Air Desorption of Chemical Warfare Agents</b> ; Unlimited; Unclassified
CR-98-08	\$25.00	<b>Demilitarization Technologies for Biological and Toxin Weapons</b> ; U.S. Federal Government Agencies ONLY; Unclassified
CR-98-07	\$15.00	<b>The Year 2000 Millennium Bug: A Chemical and Biological Defense Community Perspective</b> ; Unlimited; Unclassified
CR-98-06	\$15.00	<b>The Emergency Responder's Ability to Detect Chemical Agents</b> ; U.S. Federal Government Agencies, their Contractors, and State and Local Government Agencies; Unclassified
CR-98-05	\$25.00	<b>Critical Review of Surface Sampling Technologies for Volatilizing Liquid Chemical Agents</b> ; Unlimited; Unclassified
CR-98-04	\$25.00	<b>Critical Review of Non-Lethal Grenade Technologies and Lethality Evaluation Criteria</b> ; Unlimited; Unclassified
CR-96-03	\$60.00	<b>Critical Review of Sources of Chemical and Physical Properties Data for Militarily Significant Compounds</b> ; Unlimited; Unclassified
CR-95-02	\$20.00	<b>A Critical Review of Sources of Spectral Data for Militarily Significant Compounds</b> ; Unlimited; Unclassified
CR-95-01	\$20.00	<b>A Critical Review of Nuclear, Biological and Chemical Contamination Survivability (NBCCS)</b> ; Unlimited; Unclassified
DBS-02-01	\$125.00	<b>Chemical Sources Database: Toxicological Values for Catastrophic Release of Toxic Industrial Chemicals</b> [Set of Database (CD-ROM) and Databook]; U.S. DoD Agencies Only; Unclassified
DB-02-01	\$75.00	<b>Chemical Sources Database: Toxicological Values for Catastrophic Release of Toxic Industrial Chemicals</b> (CD-ROM); U.S. DoD Agencies Only; Unclassified
DBK-02-01	\$75.00	<b>Chemical Sources Databook: Toxicological Values for Catastrophic Release of Toxic Industrial Chemicals</b> ; U.S. DoD Agencies Only; Unclassified
DBK-99-02	\$125.00	<b>Susceptibility of Aircraft Materials to Chemical Warfare Agents</b> (Reprint); U.S. Federal Government Agencies and their Contractors; Unclassified
DBK-95-01	\$10.00	<b>Chemical Defense Materials Databook</b> ; U.S. DoD Agencies and their Contractors; EXPORT CONTROLLED; Unclassified
DB-97-01	\$60.00	<b>Physiological and Psychological Effects of the Nuclear, Biological, and Chemical Environment and Sustained Operations on Systems in Combat (P<sup>3</sup>NBC<sup>3</sup>) Database</b> (CD-ROM); U.S. DoD Agencies and their Contractors; Unclassified
HB-00-01	\$175.00	<b>BACWORTH Encyclopedia</b> (CD-ROM); U.S. Government Agencies Only; U.S. Federal Government Agencies Only; EXPORT CONTROLLED; For Official Use Only
HB-99-03	\$75.00	<b>CB Terminology Handbook</b> ; Unlimited; Unclassified
HBS-98-03	\$200.00	<b>Mask &amp; Detection Handbooks (Set of 2)</b> ; Unlimited; Unclassified
HB-95-02	\$150.00	<b>Worldwide Chemical Detection Equipment Handbook</b> ; Unlimited; Unclassified
HB-92-01	\$75.00	<b>Worldwide NBC Mask Handbook</b> ; Unlimited; Unclassified
PR-95-02	\$49.00	<b>Proceedings of the CB Medical Treatment Symposium: An Exploration of Present Capabilities and Future Requirements for Chemical and Biological Medical Treatment</b> ; Unlimited; Unclassified
SIMKIT-96-01	\$150.00	<b>Chemical Warfare Agent Simulant Training Kit</b> ; Unlimited; Unclassified
SOAR-02-08	\$25.00	<b>Possible Terrorist Use of Modern Biotechnology Techniques</b> ; U.S. Federal Government Agencies; For Official Use Only
SOAR-02-07	\$25.00	<b>Joint Science and Technology Chemical and Biological Front End Analysis and Master Plan - Individual Protection</b> (CD-ROM); U.S. Federal Government Agencies and their Contractors Only; Unclassified
SOAR-02-06	\$45.00	<b>Medical Risk Assessment of the Biological Threat</b> ; U.S. Federal Government Agencies and their Contractors Only; Unclassified
SOAR-02-05	\$75.00	<b>Tools to Minimize the Threat of Intentional Food/Water Contamination</b> ; U.S. Federal Government Agencies and their Contractors and State and Local Government Agencies; Unclassified
SOAR-01-04	\$15.00	<b>Weapons of Mass Destruction Level III Antiterrorism Training</b> ; U.S. Federal Government Agencies and their Contractors; Unclassified
SOAR-01-03	\$125.00	<b>Respirator Encumbrance Model</b> (CD-ROM); U.S. Federal Government Agencies and their Contractors; Unclassified
SOAR-00-02	\$95.00	<b>Weapons of Mass Destruction Force Protection Joint Service Training</b> ; U.S. Federal Government Agencies and their Contractors; State and Local Government Agencies; Unclassified
SOAR-00-01	Out of Print	<b>Medical NBC Battlebook</b> ; Unlimited; Unclassified
SOAR-99-13	\$95.00	<b>CB Decontamination Market Survey and Tool</b> ; U.S. Federal Government Agencies and their Contractors; EXPORT CONTROLLED; Unclassified
SOAR-99-12	\$75.00	<b>CBR-D Curricular Materials</b> (CD-ROM); U.S. Federal Government Agencies and their Contractors; EXPORT CONTROLLED; Unclassified
SOAR-99-11	\$75.00	<b>Disaster Preparedness Operation Specialist Curricular Materials</b> (CD-ROM); U.S. Federal Government Agencies and their Contractors; EXPORT CONTROLLED; Unclassified
SOAR-99-10	\$95.00	<b>Tactical NBC Information Tool</b> (CD-ROM); U.S. Federal Government Agencies ONLY; Unclassified
SOAR-98-09	\$75.00	<b>State-of-the-Art Report on the Technical Approach Options for Indoor Air Modeling</b> ; Unlimited; Unclassified
SOAR-98-08	\$95.00	<b>CINC NBC Information Tool</b> (CD-ROM); U.S. Federal Government Agencies ONLY; Unclassified
SOAR-98-07	\$125.00	<b>Disaster Preparedness Operation Specialist (DPO) Computer Aided Instruction</b> (CD-ROM); U.S. Federal Government Agencies and their Contractors; EXPORT CONTROLLED; Unclassified
SOAR-98-06	\$125.00	<b>CBR-D Computer Aided Instruction</b> (CD-ROM); U.S. Federal Government Agencies, and their Contractors, EXPORT CONTROLLED; Unclassified
SOAR-98-05	\$75.00	<b>Assessment of Chemical Detection Equipment for HAZMAT Responders</b> ; U.S. Federal Government Agencies, their Contractors, and Emergency Responders; Unclassified
SOAR-98-04	\$75.00	<b>State-of-the-Art Report on the Australia Group Chemicals</b> ; Unlimited; Unclassified
SOAR-97-03	\$95.00	<b>An Overview of U.S. Chemical and Biological Defensive Equipment</b> ; Unlimited; Unclassified
SOAR-95-02	\$60.00	<b>State-of-the-Art Report on Biodetection Technologies</b> ; U.S. DoD Agencies and their Contractors; EXPORT CONTROLLED; Unclassified

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